

SUMMARY OF THE
LEITHSVILLE STUDY AREA
ACT 537
OFFICIAL SEWER PLAN UPDATE

Draft Plan Presentation for
Lower Saucon Township Council
Meeting of January 21, 2004

Prepared for
Lower Saucon Authority
3706 Old Philadelphia Pike
Bethlehem, PA. 18015

Project LSA01-17

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Rev. February 25, 2004

ACT 537 Planning

What is it?

- Municipal Master Plan for sewage collection, treatment & disposal

Who initiates plan updates?

- Township
- Developer(s)
- Authority

Why?

- Existing on-lot problems
- Existing sewer system problems
- Proposed development

Study of Needs

- Questionnaire / Door-to-door
- Field view of properties
- Study water quality data
- Review malfunction records
- Evaluate, compare & prioritize

Sub-Area Results

<u>Area</u>	<u>Need</u>
Southwest	Moderate
Route 412 Corridor	High
Hellertown Park	High
Polk Valley Road	Moderate
Bingen East	Moderate

The primary factors establishing “need” included on-lot sewer system malfunctions and groundwater contamination risks.

On-Lot Sewer Malfunctions

PA DEP Act 537 Planning Guidance Document lists various conditions for classification of on-lot sewage system (OLDS) malfunctions:

Confirmed Malfunction

- Malfunction documented by dye testing, laboratory test results or observation by a Certified Sewage Enforcement Officer (SEO) or a professional with experience in on-lot disposal.
- Best Technical Guidance repair permits.
- Seasonally wet absorption area.
- Piped discharge from a structure with direct evidence of sewage (i.e., soap suds, food residue, solids, odors, etc.).
- Reported system backups.
- Malfunctions with photographic evidence.

Suspected Malfunction

- Abnormally green grass in the vicinity of an absorption area.
- Piped discharge(s) from the dwelling without direct evidence of sewage (i.e., no observation of soap suds, food residue, solids, odors, etc.).
- Absorption areas located in known unsuitable soils (observed wetlands, rock outcroppings, etc.).
- Cesspools and pit privies.

Potential Malfunction

- OLDS that were installed prior to system permitting requirements (1972).
- Systems located in areas extremely unlikely to receive permitting by current standards.
- Systems installed in areas having soils mapped as unsuitable or with severe limitations on OLDS or with exceptionally steep slopes (greater than 25%).
- Permits issued for OLDS repairs that meet Chapter 73 standards.

Results of On-Lot Sewer System Classification

Study Sub-Area	Confirmed Malfunctions	Suspected Malfunctions	Potential Malfunctions
Southwest	12%	16%	53%
Rt 412 Corridor	17%	9%	48%
Hellertown Park **	25%	21%	28%
Polk Valley Rd.	13%	25%	37%
Bingen East	14%	14%	50%
** Includes a holding tank located in the flood plain.			
** Includes malfunctioning on-lot sewage systems within the protection zone of Hellertown water supply.			

A separate document, entitled "Detailed Summary of Field View Data Compiled for the 'Study of Needs'", dated February 25, 2004, has been prepared and submitted for Township Council's reference.

Groundwater Contamination

- Local water supply pollution
Individual lot and neighbors.
- Off-site water table pollution
Nearby and downstream properties.
(including Hellertown water supply)
- Saucon Creek aquatic habitat
Groundwater supports creek flow.

- All properties with OLDS
Potential for groundwater impact when
located in Carbonate geology
aquifers.
- Properties with on-lot wells
Additional potential for health issues to
residents and immediate neighbors
when combined with OLDS
malfunctions.

Results of Potential Groundwater Pollution Classification

Study Sub-Area	Water Supply	Carbonate Geology Pollution Potential	Combined Pollution Potential
Southwest	Public	Not Applicable	Slight
Rt 412 Corridor *	Wells	Yes	High
Hellertown Park **	Public	Possible Impact to Hellertown Water Supply	High
Polk Valley Rd.	Public	Possible Impact to Hellertown Water Supply	High
Bingen East	Public	Possible Impact to Hellertown Water Supply	Moderate
* 28% of tested wells contaminated in Route 412 Corridor area.			
** Malfunctioning on-lot sewage systems within the protection zone of Hellertown water supply.			

Identified Alternatives

1. Repair on-lot facilities
2. Local collection with new sewage treatment facility
3. Gravity conveyance to CoB*
4. Railroad Force Main to CoB*
5. Meadows Road Force Main to LSA sewers & CoB*

* City of Bethlehem wastewater conveyance and treatment facilities.

Evaluation of Alternatives

- Routes and methods
- Impacts and benefits
- Environmental Report (UER)
- Estimate and compare costs

Selected Alternative - #3

New collection systems within the study area, with a gravity interceptor extended north along the Saucon Creek and Septa line to the CoB interceptor.

- Lower initial cost
- Lower O&M costs
- Eliminates most pumping
- Does not require downstream sewer system upgrades
- Long-term environmental benefits outweigh construction impacts
- Intermunicipal benefits –
 - o Protects Saucon Creek aquatic habitat.
 - o Protects HBA water supply.
 - o HBA could eliminate one pump station.
 - o HBA may be able to eliminate existing problem-prone sewer lines.

Proposed Construction

32,350 feet of 8" pipe
4,000 feet of 10" pipe
+ 8,700 feet of 12" pipe
45,050 feet of new sewers
(8.5 miles)

Proposed Customer Base

367 New EDU's
+ 56 Creekside Marketplace *
423 Initial EDU's
+ 104 Potential Future EDU's
527 Total Service Area EDU's

* Currently served via interim pump station
and connection to HBA sewer system.

Estimated Project Costs

Design/Permit/Insp.	\$ 1,439,316
Easements/Legal	480,000
Cost of Financing	160,000
<u>Construction</u>	<u>+ 4,112,330</u>
Total	\$ 6,191,646

Per-Unit Cost

$\$6,191,646 \div 423$ (initial unit count)

= \$14,637 / EDU, Initial

or

$\div 527 = \$11,749$ / EDU, Build-out

(Compares favorably to projected cost of \$15,000 for soil tests, design and installation of a sand mound for a single family residence.)

Property Owner Costs

New service line, 50 feet	\$1,250
New house connection	250
Yard restoration	200
<u>Pump out existing tank</u>	<u>300</u>
Construction Subtotal	\$2,000

This subtotal is based on a hypothetical residential lot configuration with relatively simple installation. Actual costs for any given property may be slightly less or significantly more than the estimated amount.

For estimating, say: \$2,000 to \$4,000

Plus

LSA Standard Tapping Fee*: \$3,006

Approx Total = \$5,006 to \$7,006

*This tapping fee amount is current as of December, 2003, but is subject to periodic review & adjustment by LSA, and may increase prior to issuance of Connection Notices.

Sources of Funding

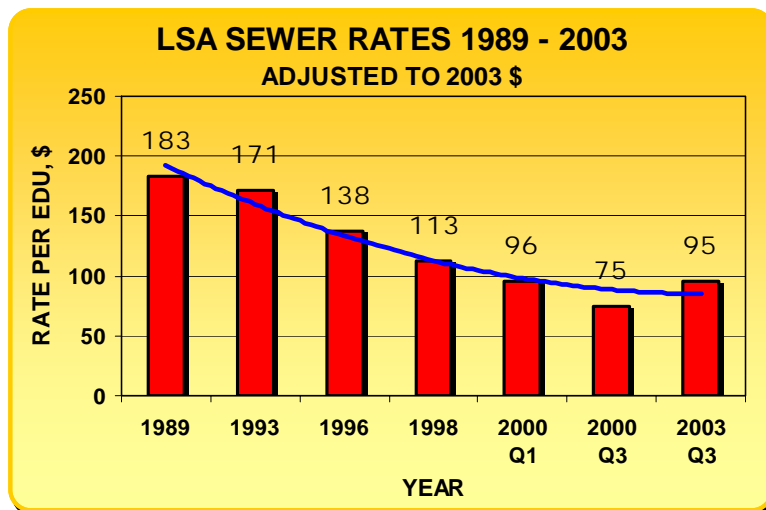
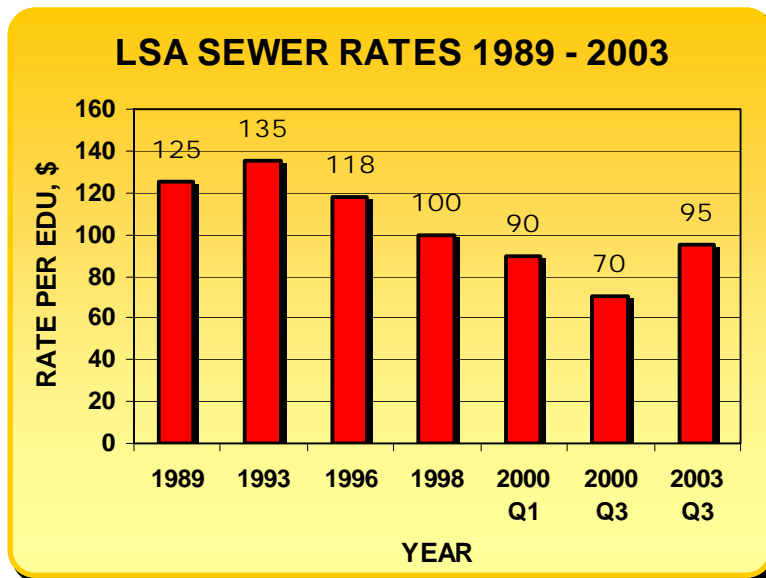
- **DEP Act 537 Reimbursement**
(Half of plan preparation cost = \$40K - \$50K)
- **Developer Contributions**
(Creekside: LSA Fund 4 = \$350,000)
- **Capital Reserves**
(Other LSA Sewer Reserve Funds)
- **Tapping Fees (New customers)**
(367 x \$3,006 = \$1,103,202)
- **Grants**
(Amounts and availability unknown)
- **New Long-term Financing**
(Including remaining project construction & financing costs) E.g.: PennVest, Bond Issue.
- **Short-term Financing**
(Covering any cash shortfall; especially, the receipt of tapping fees anticipated after project completion.) E.g.: Comm'l bank Bridge loan.

Projected User Rates

- Rates are projected based on all eligible developed properties within the study area (with a habitable structure within 150 feet of the sewer) being connected to the sewer system.
- Projections are based on engineering estimates of project cost.
- Projections assume new long-term debt, but do not assume receipt of grant funding or other subsidies.

Depending upon the type of long-term financing used to fund the sewer project, quarterly rates are projected to range between \$95 and \$105 per EDU.

A History of Sewer Rates in Lower Saucon Township



REV. February 25, 2004

Hanover Engineering Associates, Inc.

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